Analysis of Findings at the Buckeye Knoll Site (41VT98), Victoria County, Texas
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The following tasks related to site analysis have been carried out during the past quarterly period:

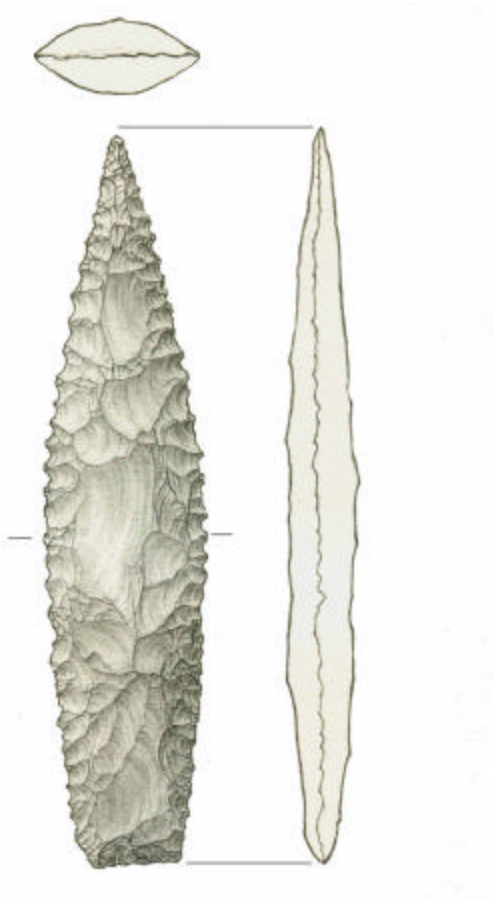
1. Radiocarbon AMS dates on purified human bone collagen have been received from Dr. Thomas Stafford of Stafford Laboratories, Boulder, Colorado. These are as follows, shown as uncalibrated dates and as calibrated age ranges:

Burial 67B	5970+/-20	6760-6830 BP
Burial 34	3500+/-20	3810-3730 BP
Burial 13	6110+/-25	7000-6930 BP
Burial 47B	6085+/-25	6980-6900 BP
Burial 50A	4755+/-20	5570-5480 BP
Burial 57	6040+/-25	6910-6820 BP
Burial 67B	5940+/-25	6770-6710 BP
Burial 73	6005+/-30	6790-6870 BP
Burial 74B	4705+/-20	5550-5350 BP
Burial 75	6075+/-20	6960-6900 BP

Seven of the calibrated ages listed above fall within the period 7000-6500 BP. As such, the results largely conform to AMS results received from Beta Analytic, Inc. and Wood's Hole. Stafford was contracted to perform these analyses to test whether or not his purified collagen dating technique would produce substantially older dates--which was considered a possibility on the basis of certain artifact forms, such as lanceolate dart points, accompanying some of the early burials. This is clearly not the case, and it can now be asserted that the majority of the graves at 41VT98 are 6,500-7,000 years old. Questions of the temporal parameters of artifact types must be considered with this fact in mind.

The Stafford-supplied ages also indicate that Buckeye Knoll was used less intensively as a morturary precinct later than 6000 BP. This was already known from Burials 23 and 25, which have attributes linked with the Late Archaic mortuary pattern reported by G. Hall from such sites as Ernest Witte and Crestmont, to the north on the lower Brazos and Colorado drainages, as well as by an AMS age of ca. 2100 BP for Burial 23. However, Burials 50A and 74B fall ca. 5500 b.p. and Burial 34 dates to ca. 3800 b.p., indicating that the site was used for burials in the Middle Archaic as defined in Texas. The combined AMS results

available at present place the great majority (+/- 75%) of dated burials in the Texas Early Archaic.



2. Macrobotanical samples were contained within flotation samples delivered to Dr. Linda S. Cummings at Paleo Research Institute in Golden Colorado. Dr. Cummings technical report is still pending, but we have received word that preserved macorbotanicals were found, which hopefully will be adequate to aid in drawing inferences about use of plant resources during periods of occupation at the site.

3. A set of lithic artifacts, mostly from burials, was taken to TARL for placement under ultra-violet light to determine if the specimens would fluoresce yellow, which would suggest geologic origins in the Edwards Plateau. All but one of the specimens did in fact so fluoresce. The one aberrant specimen was a lanceolate point from Burial 47.

4. Jason Barrett (Tx A&M University, College Station, has completed molds for all mortuary lithic artifacts, and has also completed high-power microscopy on a range of mortuary and non-mortuary lithics. His technical report is pending. He is currently working on producing epoxy-resin replications of artifacts using the molds. All artifacts used in these processes have been returned to the storage

vault at CEI's Corpus Christi laboratory and will be placed with relevant burials upon the return of the skeletal materials from Florida State University.

5. Basic data gathering is nearly complete on the zooarchaeological analysis being conducted by Susan Scott Jackson in Hattiesburg, MS. Ms. Jackson has been examining faunal bone samples from several excavation areas across the site. Below is a list of each are with the approximate number of specimens identified at least to the level of class:

   West Slope: 50,000
   Knoll Top: 15,000
   East Midden Area: 5,000

   Ms. Jackson will be preparing a technical report on her findings over the next few months.

6. A final round of technical drawings is being done the Alexander Cox. Within the next two-three weeks we expect to have a complete set of detailed drawings of all mortuary artifacts from 41VT98.

7. A complete set of scans has been done on all unique (i.e., non-bulk) artifacts, as a digital record of the findings.

8. Glen Doran reports on work done by the FSU biorachaeology team:

We are making one last sweep through the collection and are extracting more metric information for comparative purposes. Much of this is designed to assist in resolving gender ambiguity and to MNI issues within and between burials. Some of these measures are specifically designed to deal with element fragments. These measures will provide a method of referencing the Buckeye Knoll materials to other samples such as Windover for which we have comparable metrics. Many of these measures are of tarsals, metatarsals, carpals and metacarpals and in some cases of fragments of these and other elements and more traditional widths where we can make reasonable estimates of shaft lengths. The goal is to maximize the information return from the samples.

While analysis is incomplete there is an impression that the earlier Buckeye Knoll material is considerably less robust than the later sample from Buckeye Knoll. While the late materials are more limited in number the majority of the late individuals appear to be more robust than the early Buckeye Knoll materials. The primary caveat with this initial, and very preliminary observation, is that no control for sex differences between early and late samples has been performed and will be critical in evaluating this preliminary observation.

Bruce Rothschild's analysis of the materials took place in late December and a preliminary conclusion is that none of the early Buckeye Knoll sample exhibits any pathologies which are indicative of treponemal infections. However, a recently

identified tibia (actually both the left and right tibia) of a Late Archaic burial appears to exhibit evidence of a treponemal infection. Within the larger picture of treponemal infections across the southern United States this provides a strategy for examining incidence rates and treponemal distributions differences through time.

We are also completing the photographic inventory particularly of dental material for assessment of morphology. The dental photographs will also be essential in resolving MNI issues both between and within burials. This will also provide assessments of LEH and a variety of observed dental anomalies. We are also completing photography of a number of pathologies.

We are also making travel plans for the transportation of the collection back to Texas in the middle of February.